SYSTEM AND METHODS FOR INTEGRATING A PAYLOAD WITH A LAUNCH VEHICLE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a divisional of United States Patent Application No. 10/201,620 filed on July 23, 2002, now PAT 6,845,949.

FIELD OF THE INVENTION

[0002] The present invention relates to launch vehicle payloads and, more particularly, to processing a payload for integration with a launch vehicle for flight.

BACKGROUND OF THE INVENTION

[0003] Payloads carried aboard launch vehicles can vary widely as to size, function and system requirements. For example, a space shuttle orbiter of the National Space Transportation System (NSTS) can be equipped to carry, in its payload bay, configurations of Spacelab, developed by the National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA). Spacelab is modularly configured and can be varied to meet specific mission requirements. Spacelab can include a pressurized module containing a laboratory, one or more open pallets that expose materials and equipment to space, a tunnel for accessing the pressurized module, and/or an instrument pointing subsystem. An orbiter payload also could include, for example, one or more deployable spacecraft and/or small self-contained payloads known as "getaway specials".

[0004] A payload typically utilizes a high percentage of limited launch vehicle capability and resources, e.g. weight, payload bay and/or fairing volume, avionics and/or power. Launch vehicle resource allocation and payload integration are complicated by the fact that launch vehicle customers frequently have unusual individual needs for payload services such as power, monitoring/commanding, attitude/pointing, contamination control, fluid services